have ceased to divide, produces rifts in the pith tissue; and from these rifts chambers are gradually developed. Meanwhile, hyphal chains and sieve tubes, broken down in the process of chamber formation, form a mucilaginous substance. Septa between the chambers are made up of hyphal chains left unbroken by deep lobing of a ridge sent out along the angled side of the rachis and inclosing a portion of the pith web.—MABEL L. ROE.

A new luminous fungus.—KAWAMURA[31] has investigated a luminous and very poisonous fungus that grows on the decaying trunks of the beech (*Fagus sylvatica*) in the uplands of Japan, and appears in the autumn. It is known by a Japanese name meaning "moon-night mushroom," and proves to be a new species of *Pleurotus* (*P. japonicus*). The light is emitted by the gills only, which are uniformly luminous all over. The range of temperature for luminosity is 3–40° C., the optimum being 10–15° C. Experiments were made by exposing the fungus to nitrogen, hydrogen, ether, and vapor of chloroform, in all of which the luminosity disappeared after a variable interval; while in oxygen there was no change. It is stated that about 100 sq. cm. of luminous area gives enough light for reading, and that the luminosity is very evident at a distance of 30 m. or more.—J. M. C.

Alaskan liverworts.—EVANS,[32] studying the collection of Alaskan liverworts made by Dr. T. C. FRYE, finds that of 70 species in a condition to be identified with certainty, 20 are new to Alaska, 7 new to America, and 3 new to science. The Harriman Expedition yielded 63 species, of which 39 were new to Alaska, 6 new to America, and one species new to science. The total number of species now known in Alaska is 105, and comparatively little intensive exploration has been done. An admirable feature of the paper, and one which should be followed by future explorers, is that the latitude and longitude of each station are given to one minute. This will enable competent collectors to find at any future time almost the exact spot where a collection has been made.—W. J. G. LAND.

Growth and concentration of nutrient solution.—BRENCHLY[33] concludes that barley and wheat do not give complete or maximum growth in a solution containing the amount of potash and phosphoric acid (K_2O 28 ppm. P_2O_5 7 ppm.) stated by CAMERON to exist in soil solutions. The reviewer would suggest that the surface of contact between the root hair or root epidermis and the soil particle, and not the general soil solution, is the medium from which plants

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[31] KAWAMURA, SEIICHI, Studies on the luminous fungus *Pleurotus japonicus*, sp. nov. Jour. Coll. Sci. Tokyo **35**:1–29. *pl. 3.* 1915.

[32] EVANS, ALEXANDER W., Report on the Hepaticae of Alaska. Bull. Torr. Bot. Club **41**:577–616. *pl. 21.* 1915.

[33] BRENCHLY, W. E., The effect of the concentration of the nutrient solution on the growth of barley and wheat in water cultures. Ann. Botany **30**:77–90. 1916.